BOSCH
Invented for life

Access Control Systems

www.boschsecurity.com

Portfolio Brochure

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Bosch Access Control Systems

Today's challenges
Why do you need an access control system?

Increasing demand for security

Growing need to restrict access to buildings and areas

Mechanical access systems are prone to misuse

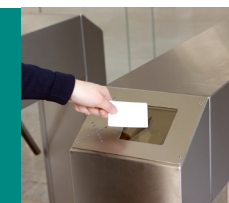More flexible working time models

Why is access control so important?
Typical applications

Access control is one of the most important subsystems in a security installation

Access in a company

Protect secure areas

Unlock doors in case of an emergency

Bosch Access Control Systems

Reliable, versatile, scalable

Access Control is a key pillar of today's security. The growing need to control access to and within buildings and areas, more flexible working time models and the limitations of mechanical locks make a modern and reliable access control system indispensable. Bosch offers complete, reliable and scalable access control solutions for any medium to large sized application.

Key advantages of access control

Investing in the right technology is central to the protection of your employees, site visitors and ultimately the success of your company. While you naturally want your business premises to be as open and welcoming as possible you need to ensure maximum protection against unauthorized intruders.

Comprehensive portfolio for every application

Bosch Access Control solutions offer you a flexible system for any project.

Our portfolio includes all access control components from different software options and controllers to a wide range of readers and credentials to comply with your individual needs. State of the art security features and encryption functionalities make sure your data is protected and privacy regulations are fulfilled.
Thanks to the scalability of the components, the system grows according to your security needs.
Our support and training team will be happy to consult you to create the system that fits your requirements.

Financial Institutions

Manufacturing

Office buildings

IT Centers

Transportation

Healthcare

Hotels

Energy and utilities

Education

Our Access Control software options

The Access Engine of the Building Integration System is an ideal access control software solution for large and complex projects, such as industrial sites, airports or governmental buildings. Our software solution for medium to large sized projects such as offices, retail stores or healthcare facilities is the Access Management System. All software solutions work with our Access Modular Controller, and can be combined with the wide range of our reader and credential portfolio.

Proven expertise in the security industry

▶ Vertical solutions expert
▶ More than 35 years of experience in access control
▶ Worldwide support near you

Software

Our Access Management System is a perfect solution for office buildings, hospitals and medical centers, schools, hotels and warehouses.

The Access Engine of the Building Integration System is ideal for banks, factories, public transportation applications, power plants, data centers, and stadiums.

Access Management System (AMS)
for medium to large sized projects

▶ Easy-to-use, scalable and resilient software with intuitive, modern graphical user interface (GUI)
▶ Integration of third-party functionalities such as time and attendance and other HR systems via API
▶ Integration with BVMS (10.1 or higher) and other video management systems
▶ Support of Open Supervised Device Protocol (OSDPv2 secure channel) for bi-directional encrypted communication between reader and controller
▶ Encrypted database and communication at all stages
▶ Suitable for office and governmental buildings, educational institutions, hospitals, etc.
▶ Administrates up to:
  – 400 divisions
  – 10,000 doors
  – 400,000 cardholders
  – 40 concurrent workplace clients
▶ Browser-based Visitor Management offering all the benefits for enhancing the visiting process

Simplicity
Efficient and user-friendly tools to configure the system and an intuitive, modern GUI for easy and convenient operation.

Maximum resilience
An additional third layer of security – Master Access Controller – between the server and the controllers ensures controller communication, even if the server fails.

Future-proof investment
AMS grows with your needs thanks to the three different license editions: you can start with Lite and switch to Plus or Professional when your security requirements grow. If your needs grow even further, you can even switch to BIS-ACE.

Building Integration System – Access Engine (BIS-ACE)
for large and complex projects

▶ Resilient and highly scalable software
▶ Integration of Bosch video, fire, intrusion and public address systems via the Building Integration System (BIS)
▶ Integration of third-party products such as time and attendance and building automation via open protocols (OPC) and API
▶ Support of Open Supervised Device Protocol (OSDP V2 secure channel) for bi-directional encrypted communication between reader and controller
▶ Suitable for public transport, critical infrastructure, industry, etc.
▶ Multi-server topology support
▶ Administrates up to:
  – 400 divisions
  – 10,000 doors per server
  – 400,000 cardholders per field controller (AMC)
  – 80 concurrent workplace clients per server
  – 200,000 detectors per server

Flexibility and integration
Modular system to combine different security, safety and building management functions from Bosch and third parties to create exactly the solution you need.

Maximum resilience
An additional third layer of security – Master Access Controller – between the server and the controllers ensures controller communication, even if the server fails.

Future-proof investment
BIS-ACE grows with your requirements, allowing you to set-up a large multi-server system which can be enhanced with various integrations at any time.

Access control functionalities at a glance*

Basic access control functionalities
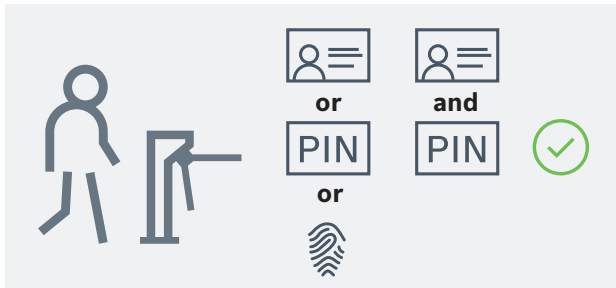
Single authentication (identification)

- ▶ Various identification modes are possible: card, PIN, biometric
- ▶ User configures verification or identification mode for reader
- ▶ After authentication, reader sends information to controller and controller verifies with the server if the user is authorized to enter
- ▶ Access is granted or denied by the controller

Multi-factor authentication (verification)

- ▶ Two or more authentication features need to be provided by the user, e.g. card and PIN
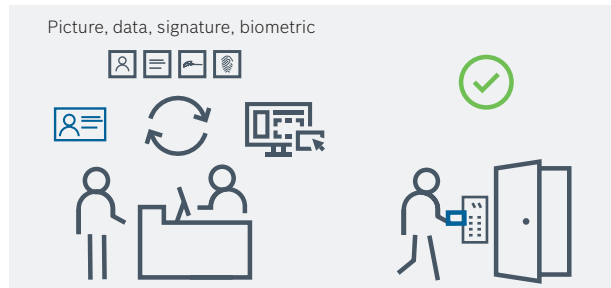- ▶ Access can only be granted if both features match

Administrative functionalities

Employee onboarding and offboarding

- ▶ One enrollment dialog to easily collect and upload all cardholder information such as data, photo, PIN codes and biometric features
- ▶ Enrollment of secured Bosch code card data from MIFARE DESFire cards supported
- ▶ Cardholders can be assigned more than one card and even threat alert cards
- ▶ For VIP cardholders, special functionalities can be configured, e.g. the right to permanently open a door or the automatic calling of an elevator when entering a building

Visitor management

- ▶ Web browser based visitor management system
- ▶ Comprehensive and user-friendly application for receptionists
- ▶ Host view for employees to pre-register their visitors
- ▶ Self-registration option for visitors
- ▶ Scanning of ID / passport for fast upload of personal information
- ▶ Upload and signing of documents
- ▶ Flexible configuration options to adjust the system to individual requirements and legal needs

✓
- ▶ **Convenience**
- ▶ **Speed**
- ▶ **High level of security**

✓
- ▶ **Efficiency**
- ▶ **Facilitation of compliance regulations**

✓
- ▶ **Efficiency**
- ▶ **Improved visitor experience**

Picture, data, signature, biometric

Picture, data, signature, biometric
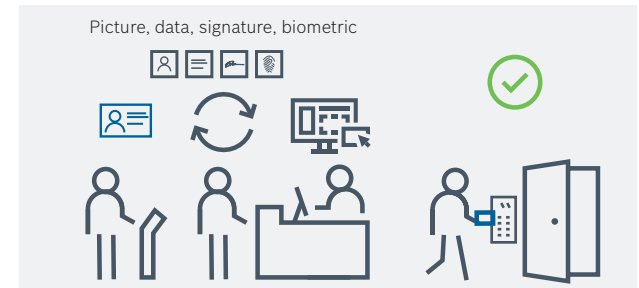
* All functionalities are available in all software options (AMS, BIS-ACE)

Advanced access control functionalities

Anti-passback

▶ User 1 scans his badge and enters an access-controlled area
▶ User 2 does not have authorization to enter the premise
▶ User 1 hands his badge to user 2 so he can enter the access-controlled area as well
▶ Anti-passback ensures that re-entry is only possible if the cardholder had checked out before or a defined time period is exceeded
▶ User 2 is denied access

▶ **High level of security**
▶ **Prevention of misuse of cards**

### Video verification

▶ User requests access with credential
▶ Video camera is installed at the door, providing the security operator with live video stream
▶ Cardholder image and information such as name or employee number and live video stream pop up in the operator's event list
▶ Operator verifies if user at the door matches authorized cardholder
▶ Operator grants or denies access

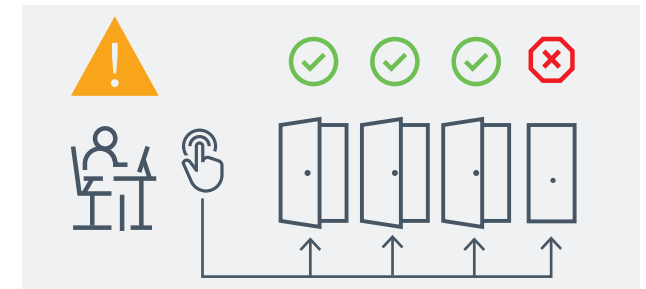▶ **High level of security**
▶ **Prevention of misuse of credentials**
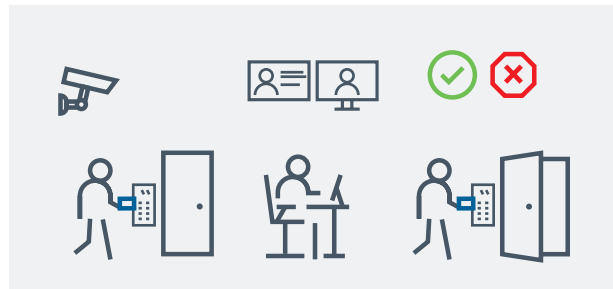
Threat level management

▶ High or low threat situation occurs
▶ Behavior of all defined doors changes with one click at the operator workstation, by pushing an emergency button or by presenting a specially configured "emergency" card to a reader
▶ Safety measures are initiated within seconds by the security operator, a cardholder with an emergency card or by anyone pushing the emergency button
▶ Doors can be preconfigured to behave in different modes: e.g. lockdown or permanent open mode
▶ Possible high threat levels: attack, fire
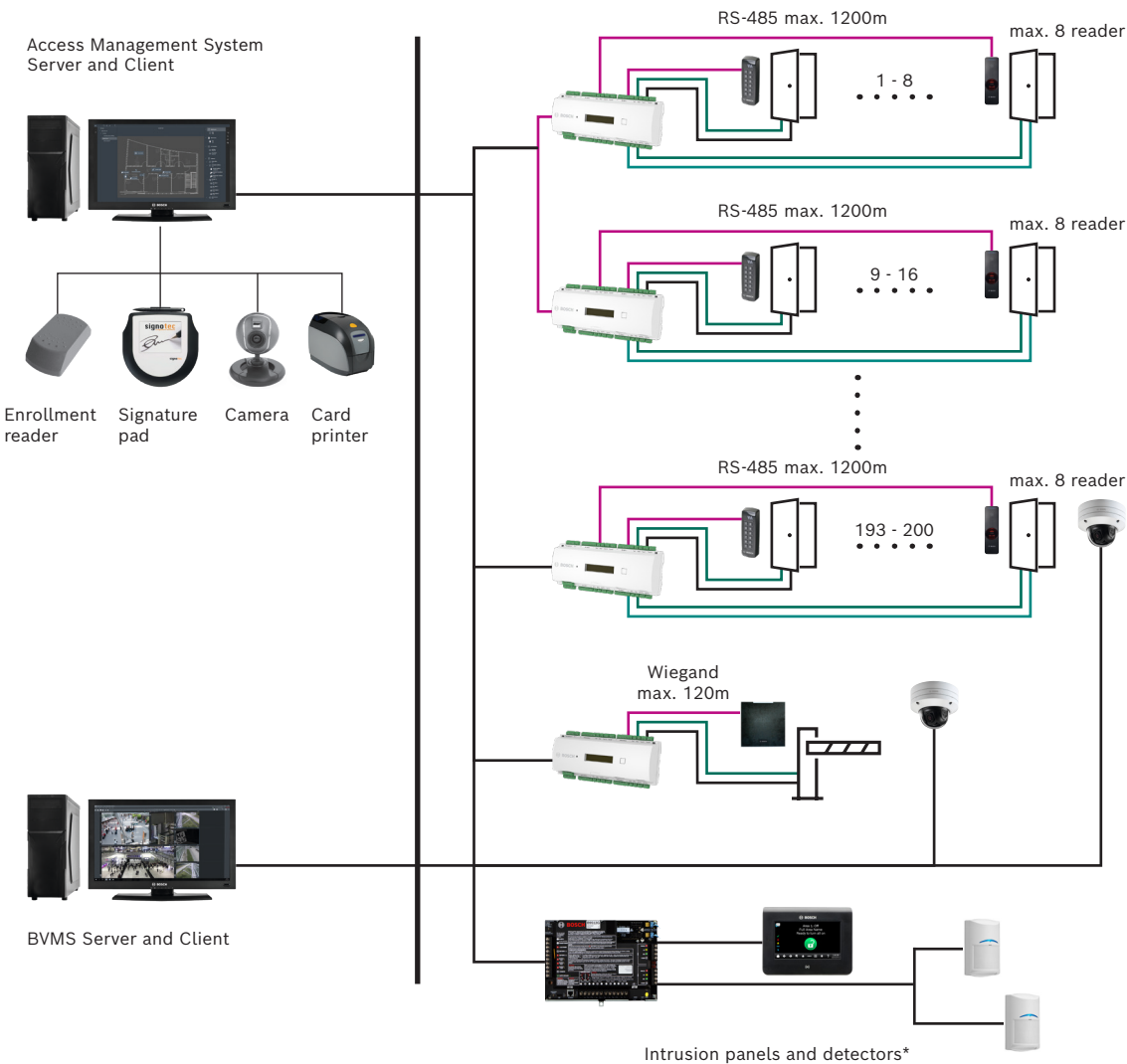▶ Possible low threat levels: sports event, family day in a company, parents' evening in a school

▶ **High level of safety on site**
▶ **Fast reaction in critical situations**

System design example
Access Management System

Access Management System
Server and Client

Enrollment reader | Signature pad | Camera | Card printer

RS-485 max. 1200m — max. 8 reader

1 - 8

RS-485 max. 1200m — max. 8 reader

9 - 16

RS-485 max. 1200m — max. 8 reader

193 - 200

Wiegand
max. 120m

BVMS Server and Client

Intrusion panels and detectors*

* Not applicable in European countries

System description / application

System size		
▶ 150 doors		
▶ 1,200 cardholders		
▶ Three operators		

AMS features	AMC features	Reader features
▶ Max. 10,000 doors	▶ 2 RS-485 buses	▶ Support of OSDPv2 secure channel
▶ Max. 200,000 cardholders	▶ 8 inputs	▶ Outdoor resistant (up to IP67)
▶ 5 cards per person	▶ 8 relays	▶ Multitechnology support (125kHz and 13.56MHz)
▶ 1,024 authorizations per MAC	▶ TCP/IP connection	▶ Wiegand and RS-485 support
▶ Graphical location map		▶ Keypad or fingerprint for verification
▶ Video integration for video verification via BVMS		
▶ Visitor Management		

Door element	Item Type
Readers	ARD-AYBS6380, ARD-FPBEW2-H2, ARD-SER90-WI
Lock	4710760066
Magnet contact	ISN-CSM35-W
REX button	4710760047
AMS Software	1 x AMS-BASE-PLUSxx**, 1 x AMS-XDRS-128Vxx, 2 x AMS-XCLI-1Vxx
Controller	APC-AMC2-4R4CF, APC-AMC2-4WCF
Power supply	APS-PSU-60
Battery	D126
BVMS Software	MBV-BPLU-100
Cameras	NDE-8504-R
Intrusion control panel *	B8512G
Intrusion touch screen keypad *	B942
Intrusion detectors	ISC-CDL1-W15G

** Version dependent

Software licenses

AMS licenses

Base licenses

AMS-BASE-LITE40	AMS-BASE-PLUS40	AMS-BASE-PRO40
Lite license	Plus license	Pro license

Expansion licenses

AMS-XDIV-1V40	AMS-XCLI-1V40	AMS-XCLI-5V40	AMS-XCRD-100V40	AMS-XCRD-1KV40	AMS-XCRD-10KV40	AMS-XCRD-50KV40	AMS-XDRS-32V40	AMS-XDRS-128V40	AMS-XDRS-512V40	AMS-XOND-25V40	AMS-XMAC-1V40	AMS-XMAC-5V40	AMS-FVIS-WEBV40	AMS-XPAN-10V40	AMS-XPAN-50V40
License for 1 division	License for 1 operator client	License for 5 operator client	License for 100 ID cards	License for 1,000 ID cards	License for 10,000 ID cards	License for 50,000 ID cards	License for 32 doors	License for 128 doors	License for 512 doors	License for 25 remote online doors	License for 1 MAC server	License for 5 MAC server	Licence for Visitor Management	License for 10 intrusion panels	License for 50 intrusion panels

BIS-ACE licenses

Base licenses

BIS 4.9 Basic License
BIS-BGEN-B49

Feature licenses

BIS-FGEN-AMPK49	BIS-FGEN-MSRV49	BIS-FGEN-BVMS49	BIS-FAUE-BPA49	BIS-FACE-BPA49	BIS-FACE-PRK49	BIS-FACE-API49	BIS-FACE-VISWEB49	BIS-FVIE-BPA49
BIS 4.9 Alarm Management Package	BIS 4.9 Multi-Server Connect per Server	BIS 4.9 BVMS Connectivity	AUE 4.9 Basic License	ACE 4.9 Basic License	ACE 4.9 Extended Carpark Management	ACE 4.9 Application Programming Interface (API)	ACE 4.9 Visitor Management	VIE 4.9 Basic License

Expansion licenses

BIS-XACE-100C49	BIS-XACE-1KC49	BIS-XACE-10KC49	BIS-XACE-50KC49	BIS-XACE-32DR49	BIS-XACE-128D49	BIS-XACE-512D49	BIS-XACE-25OF49	BIS-XACE-25ON49	BIS-XACE-1MAC49	BIS-XACE-10MC49	BIS-XACE-1KEY49
ACE 4.9 additional 100 ID Cards	ACE 4.9 additional 1,000 ID Cards	ACE 4.9 additional 10,000 ID Cards	ACE 4.9 additional 50,000 ID Cards	ACE 4.9 additional 32 Doors	ACE 4.9 additional 128 Doors	ACE 4.9 additional 512 Doors	ACE 4.9 additional 25 Offline Doors	ACE 4.9 25 wireless online doors	ACE 4.9 additional 1 MAC	ACE 4.9 additional 10 MAC	ACE 4.9 additional 1 Key Cabinet

Hardware

Access Modular Controller

▶ Intelligent access management controller
▶ Carries out independent authorization checks on access points, takes access decisions, controls closing/opening elements and registers movement events – even when offline
▶ Specifically designed to work with AMS and BIS-ACE systems
▶ Support of RS-485/OSDPv2 secure channel and Wiegand technology
▶ Offline capability
▶ Administrates up to:
  – 8 readers
  – 400,000 cardholders

Speed of installation
The modular concept makes system planning and stocking easy. The service display allows for quick troubleshooting and system maintenance. Thanks to the fast and reliable Ethernet host interface, cardholder updates are completed within seconds.

State of the art security
Communication between controllers and central server is secured by AES 256 bit encryption with custom keys running on DTLS protocol.

Reliability
Thanks to its offline capability and supervised battery extensions, the AMC works continuously. To avoid losing data, the event buffer memory stores up to 2 million events offline.

Future-proof investment
Modular system design ensures that the system can grow and adapt according to your needs and changes in technology.

Readers and Credentials

Bosch offers a wide range of readers and cards, from fully featured advanced solutions to cost-effective starter systems. Most models are available with or without keypad or as biometric versions. Wiegand and RS-485 (OSDPv2 SC) support ensures that our solutions work seamlessly with your technology. Our support team will be happy to assist you in choosing the right system.
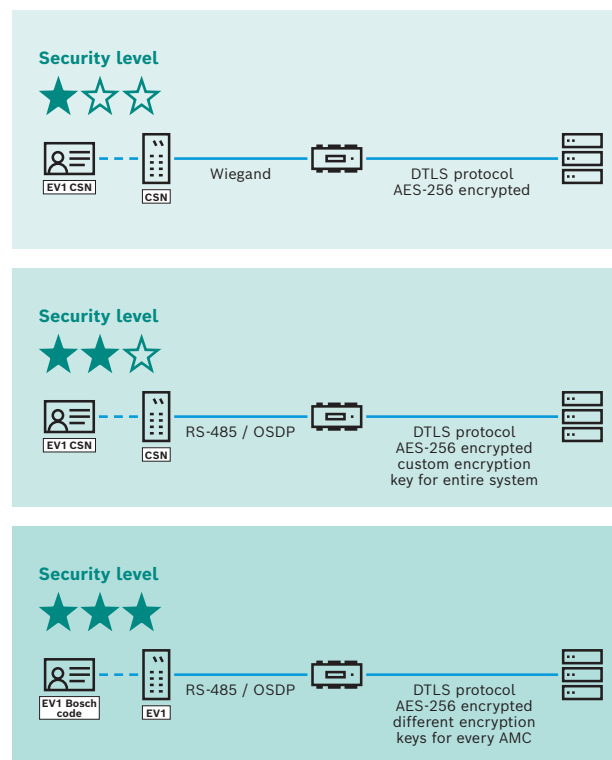
Proximity Readers

Proximity readers act as an interface between the proximity card and the access controller. The data is transferred from the card to the reader on 125 kHz frequency band.

Smart Readers

Smart readers act as an interface between the smart card and the access controller. The data is transferred from the card to the reader on 13.56 MHz frequency band. Bosch offers all customers highest security standards with their unique Bosch data elements. All RS-485 smart card readers come equipped with specialized FW to access a secure sector and read the Bosch code on the smart cards.

Readers Security Level

Security level
★☆☆

EV1 CSN — CSN — Wiegand — DTLS protocol AES-256 encrypted

Security level
★★☆

EV1 CSN — CSN — RS-485 / OSDP — DTLS protocol AES-256 encrypted custom encryption key for entire system

Security level
★★★

EV1 Bosch code — EV1 — RS-485 / OSDP — DTLS protocol AES-256 encrypted different encryption keys for every AMC

▶ Support of OSDP (up to OSDPv2 secure channel)
▶ Support of Bosch coded MIFARE credentials
▶ Secure communication via AES 256bit encryption
▶ Latest SQL data base support

Proximity Readers

Material description	Card Reader, HIDprox, mullion	Card Reader, HIDprox, mini mullion	Standalone device, HIDprox	Card Reader, EM, mini mullion
Commercial type number (CTN)	ARD-MINIPROX	ARD-PROX-PPL	ARD-ENTRYPROX	ARD-AYK12
Bosch controller compatibility	AMC2-4WCF, AMC2-2WCF, AEC, B/G-Series	AMC2-4WCF, AMC2-2WCF, AEC, B/G-Series	Standalone device	AMC2-4WCF, AMC2-2WCF, AEC, B/G-Series
Software compatibility	BIS-ACE, AEC, AMS	BIS-ACE, AEC, AMS	BIS-ACE, AEC, AMS	BIS-ACE, AEC, AMS
Interfaces	Wiegand	Wiegand	Wiegand	Wiegand
Supported protocol	Wiegand	Wiegand	Wiegand	Wiegand
Panel connection	Pigtail	Pigtail	Terminal strip	Pigtail
Mounting	Surface mount	Surface mount	Surface mount	Surface mount
Supported credential technology	HID Prox	HID Prox	HID Prox	EM4102
Bosch code	–	–	–	–
Power supply	5 – 16 VDC	5 – 16 VDC	10 – 16 VDC	5 – 16 VDC
Environment class	IP55	IP55	IP55	IP65
Maximum reading distance	13 cm	6 cm	6 cm	8 cm
Keypad	no	no	yes	no
Dimensions (H x W x D)	152 x 43 x 25,4 mm	79,6 x 44 x 17 mm	133 x 70 x 35 mm	80 x 40 x 13 mm

Smart Card Readers
(Wiegand) iCLASS

Name	LECTUS secure 1000 WI	LECTUS secure 4000 WI	LECTUS secure 5000 WI	LECTUS secure 9000 WI
Material description	**Card reader, iCLASS, Wiegand**	**Handsfree card reader, iCLASS, Wiegand**	**Card reader with keypad, iCLASS, Wiegand**	**Handsfree card reader, iCLASS, Wiegand**
Commercial type number (CTN)	ARD-SER10-WI	ARD-SER40-WI	ARD-SERK40-W1	ARD-SER90-WI

▶ 13.56 MHz proximity readers for connecting to access controllers with Wiegand interfaces

▶ Available with four different form factors, LECTUS secure readers meet nearly all installation requirements

Bosch controller compatibility	APC- AMC2-4WCF, APC-AMC2-2WCF, AEC, B/G-Series	APC- AMC2-4WCF, APC-AMC2-2WCF, AEC, B/G-Series	APC- AMC2-4WCF, APC-AMC2-2WCF, AEC, B/G-Series	APC- AMC2-4WCF, APC-AMC2-2WCF, AEC, B/G-Series
Software compatibility	BIS-ACE, AEC, AMS	BIS-ACE, AEC, AMS	BIS-ACE, AEC, AMS	BIS-ACE, AEC, AMS
Interfaces	Wiegand	Wiegand	Wiegand	Wiegand
Supported protocol	Wiegand	Wiegand	Wiegand	Wiegand
Panel connection	Pigtail	Pigtail	Pigtail	Pigtail
Mounting	Surface mount	Surface mount	Surface mount	Surface mount
Supported standard	ISO 1443A, ISO 15693, ISO 14443B	ISO 1443A, ISO 15693, ISO 14443B	ISO 1443A, ISO 15693, ISO 14443B	ISO 1443A, ISO 15693, ISO 14443B
Supported credential technology	iCLASS, iCLASS SE, Seos, MIFARE Classic (CSN)	iCLASS, iCLASS SE, Seos, MIFARE Classic (CSN)	iCLASS, iCLASS SE, Seos, MIFARE Classic (CSN)	iCLASS, iCLASS SE, Seos, MIFARE Classic (CSN)
Bosch code	–	–	–	–
Power supply	5 – 16 VDC	5 – 16 VDC	5 – 16 VDC	5 – 16 VDC
Environment class	IP55 (IP65 with gasket)	IP55 (IP65 with gasket)	IP55 (IP65 with gasket)	IP65
Maximum reading distance	7.6 cm	11.4 cm	14 cm	33.6 cm
Keypad	no	no	yes	no
Dimensions (H x W x D)	103 x 48 x 23 mm	122 x 84 x 24 mm	122 x 85 x 28 mm	333 x 333 x 39 mm

Smart Card Readers
(Wiegand and RS-485 (OSDP V2)) – MIFARE

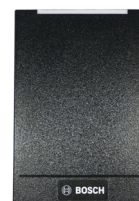| Name	LECTUS duo 3000C	LECTUS duo 3000 CK	LECTUS duo 3000 E	LECTUS duo 3000 EK
Material description	**Card reader, MIFARE Classic**	**Card reader with keypad, MIFARE Classic**	**Card Reader, MIFARE EV1**	**Card reader with keypad, MIFARE EV1**
Commercial type number (CTN)	ARD-AYBS6260	ARD-AYBS6360	ARD-AYBS6280	ARD-AYBS6380

▶ The LECTUS duo 3000 Classic line consists of a keypad and a non keypad version for MIFARE Classic and MIFARE DESFire. They come equipped with the Bosch coded MIFARE data sector and support reading the CSN of ISO14443A cards as well.

▶ Both reader types provide a Wiegand and RS-485/OSDP interface, selectable easily by DIP switch.

▶ Three LED indicators and a beeper give clear feedback to the user during operation. The reader's logo is illuminated in the dark.

	LECTUS duo 3000C	LECTUS duo 3000 CK	LECTUS duo 3000 E	LECTUS duo 3000 EK
Bosch controller compatibility	AMC2-4WCF, AMC2-2WCF, AMC2-4R4CF, AEC	AMC2-4WCF, AMC2-2WCF, AMC2-4R4CF, AEC	AMC2-4WCF, AMC2-2WCF, AMC2-4R4CF, AEC	AMC2-4WCF, AMC2-2WCF, AMC2-4R4CF, AEC
Software compatibility	BIS-ACE, AMS, AEC	BIS-ACE, AMS, AEC	BIS-ACE, AMS, AEC	BIS-ACE, AMS, AEC
Interfaces	Wiegand, RS-485	Wiegand, RS-485	Wiegand, RS-485	Wiegand, RS-485
Supported protocol	Wiegand, OSDP v2 SC	Wiegand, OSDP v2 SC	Wiegand, OSDP v2 SC	Wiegand, OSDP v2 SC
Panel connection	Terminal strip	Terminal strip	Terminal strip	Terminal strip
Mounting	Surface mount	Surface mount	Surface mount	Surface mount
Supported standard	ISO 1443A	ISO 1443A	ISO 1443A	ISO 1443A
Supported credential technology	ISO14443A CSN , MIFARE Classic	ISO14443A CSN , MIFARE Classic	ISO14443A CSN, MIFARE DESFire, MIFARE Classic	ISO14443A CSN, MIFARE DESFire, MIFARE Classic
Bosch code	yes	yes	yes	yes
Power supply	8.5 – 16 VDC	8.5 – 16 VDC	8.5 – 16 VDC	8.5 – 16 VDC
Environment class	IP65	IP65	IP65	IP65
Vandal resistance	IK-08	IK-10	IK-08	IK-10
Maximum reading distance	3 cm	3 cm	3 cm	3 cm
Keypad	no	yes	no	yes
Dimensions (H x W x D)	137 x 44 x 27,5 mm	137 x 44 x 27,5 mm	137 x 44 x 27,5 mm	137 x 44 x 27,5 mm

Smart Card Readers
Multitech smart card readers (RS-485 OSDP V2 encrypted) – iCLASS and MIFARE

Name	LECTUS secure 1000 RO	LECTUS secure 2000 RO	LECTUS secure 4000 RO	LECTUS secure 5000 RO
Material description	**Card reader, OSDP**	**Card reader, OSDP**	**Card reader, OSDP**	**Card reader with keypad, OSDP**
Commercial type number (CTN)	ARD-SER10-RO	ARD-SER15-RO	ARD-SER40-RO	ARD-SERK40-RO

Bosch controller compatibility	AMC2-4WCF	AMC2-4WCF	AMC2-4WCF	AMC2-4WCF
Software compatibility	BIS-ACE, AMS	BIS-ACE, AMS	BIS-ACE, AMS	BIS-ACE, AMS
Interfaces	RS-485	RS-485	RS-485	RS-485
Supported protocol	OSDPv2 SC	OSDPv2 SC	OSDPv2 SC	OSDPv2 SC
Panel connection	Terminal strip	Terminal strip	Terminal strip	Terminal strip
Mounting	Surface mount	Surface mount	Surface mount	Surface mount
Supported standard	ISO 1443A, ISO 15693, ISO 14443B	ISO 1443A, ISO 15693, ISO 14443B	ISO 1443A, ISO 15693, ISO 14443B	ISO 1443A, ISO 15693, ISO 14443B
Supported credential technology	MIFARE DESFire EV1, MIFARE Classic, iCLASS, iCLASS SE, Seos	MIFARE DESFire EV1, MIFARE Classic, iCLASS, iCLASS SE, Seos	MIFARE DESFire EV1, MIFARE Classic, iCLASS, iCLASS SE, Seos	MIFARE DESFire EV1, MIFARE Classic, iCLASS, iCLASS SE, Seos
Bosch code	yes	yes	yes	yes
Power supply	5 – 16 VDC	5 – 16 VDC	5 – 16 VDC	5 – 16 VDC
Environment class	IP55 (IP65 with gasket)	IP55 (IP65 with gasket)	IP55 (IP65 with gasket)	IP55 (IP65 with gasket)
Maximum reading distance	7.6 cm	7.6 cm	13 cm	13 cm
Keypad	no	no	no	yes
Dimensions (H x W x D)	103 x 48 x 23 mm	153 x 48 x 23 mm	122 x 85 x 24 mm	122 x 85 x 28 mm

▶ Highest level of security due to OSDPv2 AES 128bit encryption.

▶ 13.56 MHz proximity readers for connecting to access controllers with OSDP interfaces

▶ They come equipped with the Bosch coded MIFARE data sector and support reading the CSN of ISO14443A cards as well.

▶ Interoperable with a growing range of technology environments and form factors

Smart Card Readers
Multitech smart card readers (RS-485 OSDP V2 encrypted) – MIFARE and LEGIC

Name	LECTUS select	LECTUS select	LECTUS select	LECTUS select
Material description	**Card reader with keypad, OSDP (black)**	**Card reader, OSDP (black)**	**Card reader with keypad, OSDP (white)**	**Card reader, OSDP (white)**
Commercial type number (CTN)	ARD-SELECT-BOK*	ARD-SELECT-BO*	ARD-SELECT-WOK*	ARD-SELECT-WO*
Bosch controller compatibility	AMC2-4R4CF	AMC2-4R4CF	AMC2-4R4CF	AMC2-4R4CF
Software compatibility	BIS-ACE, AMS	BIS-ACE, AMS	BIS-ACE, AMS	BIS-ACE, AMS
Interfaces	RS-485	RS-485	RS-485	RS-485
Supported protocol	OSDPv2 SC	OSDPv2 SC	OSDPv2 SC	OSDPv2 SC
Panel connection	Terminal strip	Terminal strip	Terminal strip	Terminal strip
Mounting	Flush mount / Surface mount (use optional mount panel) **	Surface mount	Surface mount	Surface mount
Supported standard	ISO 14443A, ISO 15693, ISO 14443B	ISO 14443A, ISO 15693, ISO 14443B	ISO 14443A, ISO 15693, ISO 14443B	ISO 14443A, ISO 15693, ISO 14443B
Supported credential technology	MIFARE DESFire EV1 & EV2, LEGIC advant	MIFARE DESFire EV1 & EV2, LEGIC advant	MIFARE DESFire EV1 & EV2, LEGIC advant	MIFARE DESFire EV1 & EV2, LEGIC advant
Bosch code	yes	yes	yes	yes
Power supply	8 – 30 VDC	8 – 30 VDC	8 – 30 VDC	8 – 30 VDC
Environment class	IP54	IP54	IP54	IP54
Maximum reading distance	7.6 cm	7.6 cm	7.6 cm	7.6 cm
Keypad	yes	no	yes	no
Dimensions (H x W x D)	88 x 99 x 27 mm	88 x 99 x 27 mm	88 x 99 x 27 mm	88 x 99 x 27 mm

▶ Compact design, front cover, rear panel and surface-mounted housing made of plastic

▶ They come equipped with the Bosch coded MIFARE data sector and support reading the CSN of ISO14443A cards as well.

▶ Easy installation

▶ Flush-mount: on standard flush-mounting box Ø 60 mm

▶ Surface-mount: directly on the wall - cable entry options from above, below and behind the device

▶ Sabotage monitoring

▶ When using smart cards that carry multiple applets (e.g. MIFARE & Legic), please check with your integrator for the best performance of the installation

* Check regional availability with your local sales contact

** Surface-mount: directly on the wall - cable entry options from above, below and behind the device. Use optional mount panel. For the black model CTN: ARA-SELECT-SWA. For the white model CTN: ARA-SELECT-WWA.

Biometric Reader and Enrollment Reader
BioEntry W2 and Lectus enroll 5000

Name	BioEntry W2	Lectus enroll 5000
Material description	**Fingerprint-card reader, OSDP, multiCLASS**	**USB enrollment reader, MIFARE EV1**
Commercial type number (CTN)	ARD-FPBEW2-H2	ARD-EDMCV002-USB

Bosch controller compatibility	AMC2-4WCF, AMC2-2WCF, AMC2-4R4CF, AEC	n.a.
Software compatibility	BIS-ACE, AMS, AEC	BIS-ACE, AMS
Interfaces	Wiegand, RS-485	n.a.
Supported protocol	Wiegand, OSDPv2 SC	n.a.
Panel connection	Terminal strip, RJ45 (PoE)	USB
Mounting	Surface mount	Surface mount
Supported standard	ISO 14443A	ISO 14443A
Supported credential technology	EM, HID Prox, MIFARE Classic, MIFARE DESFire EV1, HID-Corporate-1000, iCLASS, iCLASS SE, Seos	MIFARE classic, DESFire EV1
Bosch code	yes	yes
Power supply	12 VDC or PoE	Powered by USB
Environment class	IP67	IP40 (indoor)
Maximum reading distance	13 – 127 mm	n.a.
Keypad	no	no
Dimensions (H x W x D)	172 x 50 x 43 mm	112 x 54 x 27 mm

Biometric Reader
IDEMIA SIGMA Lite

Name	IDEMIA SIGMA Lite	IDEMIA SIGMA Lite	IDEMIA SIGMA Lite	IDEMIA SIGMA Lite
Material description	**Fingerprint reader, LED indicator**	**Fingerprint-card reader, iClass, LED indicator**	**Fingerprint-card reader, Prox, LED indicator**	**Fingerprint-card reader, Multi, LED indicator**
Commercial type number (CTN)	293678615	293678628	293673665	293678636

Bosch controller compatibility	AMC2-4WCF, AMC2-2WCF, AMC2- 4R4CF	AMC2-4WCF, AMC2-2WCF, AMC2- 4R4CF	AMC2-4WCF, AMC2-2WCF, AMC2- 4R4CF	AMC2-4WCF, AMC2-2WCF, AMC2- 4R4CF
Software compatibility	BIS ACE, AMS	BIS ACE, AMS	BIS ACE, AMS	BIS ACE, AMS
Interfaces	Wiegand, RS-485	Wiegand, RS-485	Wiegand, RS-485	Wiegand, RS-485
Supported protocol	Wiegand, OSDPv2 SC	Wiegand, OSDPv2 SC	Wiegand, OSDPv2 SC	Wiegand, OSDPv2 SC
Panel connection	Pigtail	Pigtail	Pigtail	Pigtail
Mounting	Surface mount	Surface mount	Surface mount	Surface mount
Supported standard	-	ISO 15693	-	ISO 14443A
Supported credential technology	-	HID iClass, iClass SE, Seos	HID Prox	MIFARE Classic, MIFARE DESFire
Bosch code	-	-	-	-
Power supply	12 - 24 VDC or PoE	12 - 24 VDC or PoE	12 - 24 VDC or PoE	12 - 24 VDC or PoE
Environment class	IP65	IP65	IP65	IP65
Keypad	no	no	no	no
Dimensions (H x W x D)	156 x 68 x 62 mm	156 x 68 x 62 mm	156 x 68 x 62 mm	156 x 68 x 62 mm

Biometric Reader
IDEMIA SIGMA Lite+

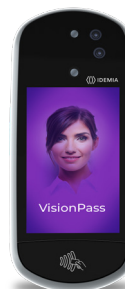| Name	IDEMIA SIGMA Lite+	IDEMIA SIGMA Lite+	IDEMIA SIGMA Lite+
Material description	**Fingerprint-card reader, iClass, touchscreen**	**Fingerprint-card reader, Prox, touchscreen**	**Fingerprint-card reader, Multi, touchscreen**
Commercial type number (CTN)	293673644	293678678	293678660

Bosch controller compatibility	AMC2-4WCF, AMC2-2WCF, AMC2-4R4CF	AMC2-4WCF, AMC2-2WCF, AMC2-4R4CF	AMC2-4WCF, AMC2-2WCF, AMC2-4R4CF
Software compatibility	BIS ACE, AMS	BIS ACE, AMS	BIS ACE, AMS
Interfaces	Wiegand, RS-485	Wiegand, RS-485	Wiegand, RS-485
Supported protocol	Wiegand, OSDPv2 SC	Wiegand, OSDPv2 SC	Wiegand, OSDPv2 SC
Panel connection	Pigtail	Pigtail	Pigtail
Mounting	Surface mount	Surface mount	Surface mount
Supported standard	ISO 15693	-	ISO 14443A
Supported credential technology	HID iClass, iClass SE, Seos	HID Prox	MIFARE Classic, MIFARE DESFire
Bosch code	-	-	-
Power supply	12 - 24 VDC or PoE	12 - 24 VDC or PoE	12 - 24 VDC or PoE
Environment class	IP65	IP65	IP65
Keypad	yes	yes	yes
Dimensions (H x W x D)	156 x 68 x 62 mm	156 x 68 x 62 mm	156 x 68 x 62 mm

Biometric Reader
IDEMIA MorphoWave Compact and IDEMIA VisionPass

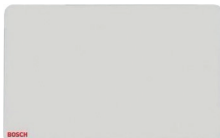| Name	IDEMIA MorphoWave Compact	IDEMIA VisionPass
Material description	**Contactless 3D fingerprint-card reader, MDPI**	**Facial recognition card reader, MDPI**
Commercial type number (CTN)	293722319	293744604

Bosch controller compatibility	AMC2-4WCF, AMC2-2WCF, AMC2-4R4CF	AMC2-4WCF, AMC2-2WCF, AMC2-4R4CF
Software compatibility	BIS ACE, AMS	BIS ACE, AMS
Interfaces	Wiegand, RS-485	Wiegand, RS-485
Supported protocol	Wiegand, OSDPv2 SC	Wiegand, OSDPv2 SC
Panel connection	Pigtail	Pigtail
Mounting	Surface mount or pedestal mount (optional)	Surface mount
Supported standard	ISO 14443A (MiFare) and ISO 15693 (iClass and SEOS)	ISO 14443A (MiFare) and ISO 15693 (iClass and SEOS)
Supported credential technology	HID iClass, iClass SE, Seos HID Prox MIFARE DESFire	HID iClass, iClass SE, Seos HID Prox MIFARE DESFire
Bosch code	-	-
Power supply	12 - 24 VDC or PoE+	12 - 24 VDC
Environment class	IP65	IP65
Keypad	yes	yes
Dimensions (H x W x D)	250 x 152 x 216 mm	156 x 68 x 62 mm

Credentials
MIFARE DESFire, MIFARE Classic and iCLASS

Material description	Card, MIFARE EV1, Bosch coded	Keyfob MIFARE EV1	MIFARE Classic Card Imprinted Card Number/ Bosch coded	Contactless MIFARE ID Keyfob 1
Commercial type number (CTN)	ACD-EV1-ISO	ACT-EV1TRF-SA1	ACD-MFC-ISO	ACT-MFCTRF-SA1
Description	MIFARE DESFire EV1 ID card with 8 kByte data storage, 2 application areas, one of which can be customized.	MIFARE DESFire EV1 ID keyfob with 8 kByte data storage, 2 application areas, one of which can be customized.	MIFARE Classic ID card with 1 kByte data storage, 2 application areas, one of which can be customized ▶ PVC plastic card ▶ Credit card size ▶ Imprinted card number ▶ MIFARE Classic chip or	MIFARE Classic ID keyfob with 1 kByte data storage, 2 application areas, one of which can be customized

Material description	iCLASS 26 bit Card with printed Bosch Logo	iCLASS 37 bit card with printed Bosch Logo	iCLASS 26bit Keyfob	iCLASS 37bit Keyfob
Commercial type number (CTN)	ACD-ICL2K-2AR	ACD-ICL2K-16AR	ACT-ICL256-2AR	ACA-ICL256-2AR
Description	A 13.56 MHz contactless smart card programmed to Wiegand 26-bit format. It has two 1 Kb application areas (256 Byte capacity).	A 13.56 MHz contactless smart card programmed to Wiegand 37-bit format. It has two 1 Kb application areas (256 Byte capacity).	▶ Plastic Tag, PVC ▶ Dimensions: 34 x 31 x 4.4 mm ▶ Fastening Slot ▶ iCLASS chip	A contactless adhesive tag with smart card technology programmed to Wiegand 37-bit format. It operates at 13.56 MHz. It is 16K (2K Byte) with 16 application areas.

* Check regional availability with your local sales contact

MIFARE DESFire and MIFARE Classic are all Bosch coded and compatible with the complete Bosch reader portfolio.
Further credentials can be found in your local online product catalogue (link: https://www.boschsecurity.com/xc/en/product-catalog/).

Readers and credentials
Compatibility matrix

Bus type	Recommended Bosch Readers	Card format						
		MIFARE DESFire EV1 (Bosch code)	MIFARE Classic (Bosch code)	iCLASS, iCLASS SE, Seos	LEGIC advant	ISO 14443-A CSN	EM card	HID Prox
		13.56 MHz					125kHz	
RS-485	LECTUS secure 1000 RO LECTUS secure 2000 RO LECTUS secure 4000 RO LECTUS secure 5000 RO	●	●	●		●*		
	LECTUS select	●	●*		●**	●*		
Wiegand	LECTUS duo 3000 C LECTUS duo 3000 CK		●			●		
	LECTUS duo 3000 E LECTUS duo 3000 EK	●	●			●		
	ARD-FPBEW2-H2	●	●	●		●	●	●
	LECTUS secure 1000 WI LECTUS secure 4000 WI LECTUS secure 5000 W1 LECTUS secure 9000 WI			●		●		
	ARD-AYK12						●	
	ARD Miniprox ARD Entrypox ARD-PROX-PPL							●

* Special configuration is needed   ** Special configuration needed for LEGIC prime

Access Modular Controller
AMC Controllers

Material description	Door controller Wiegand, 2 readers	Door controller Wiegand, 4-8 readers	Door controller RS-485, 8 readers
Commercial type number (CTN)	APC-AMC2-2WCF	APC-AMC2-4WCF	APC-AMC2-4R4CF
Input voltage	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
Output voltage	12 VDC	12 VDC	10 - 30 VDC
Number of connectable readers	2	4	8
Number of Inputs	4	8	8
Number of Outputs	4	8	8
Display	yes	yes	yes
Amount of cardholders	400.000	400.000	400.000
Reader Interface	Wiegand	Wiegand	RS-485
Max reader cable length	110m per reader port	110m per reader port	1200m per Bus
Reader operating voltage	12V DC	12V DC	10-30V DC
Reader monitoring	no	no	yes
Number of wires per reader	6 + shield	6 + shield	4 + shield
Number of connectable reader extensions	1	1	–
Number of connectable I/O extensions	3	3	3
Mounting	Standard DIN rail	Standard DIN rail	Standard DIN rail
Reader protocol support	Wiegand	Wiegand	OSDP, LBUS, MICOS, BG900
Standards	CE, UL	CE, UL	CE, UL, VDS
Dimensions (H x W x D)	90 x 232 x 63 mm	90 x 232 x 63 mm	90 x 232 x 63 mm

Access Modular Controller
AMC I/O Extension Boards

Material description	Wiegand extension board for 4 readers	I/O extension board with 8-input & 8-output	I/O extension board with 16-input & 16-output	I extension board with 16-input
Commercial type number (CTN)	API-AMC2-4WE	API-AMC2-8IOE	API-AMC2-16IOE	API-AMC2-16IE
Input voltage	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
Output voltage to reader	12 VDC	n/a	n/a	n/a
Number of connetcable readers	4	–	–	–
Number of Inputs	8	8	16	16
Number of Outputs	8	8	16	
Mounting	Standard DIN rail	Standard DIN rail	Standard DIN rail	Standard DIN rail
Display	no	no	no	no
Dimensions (H x W x D)	90 x 232 x 46 mm	90 x 232 x 46 mm	90 x 232 x 46 mm	90 x 232 x 46 mm

Access Modular Controller Accessories

Enclosures

Material description	Enclosure with 1 DIN rail	Enclosure with 2 DIN rails	Enclosure with power supply & DIN rail
Commercial type number (CTN)	AEC-AMC2-UL01	AEC-AMC2-UL02	AEC-AMC2-ENC3/ENC3Z (China)
Information	▶ Steel enclosure with status LED and preassembled cables ▶ 1 DIN rail system for easy mounting of AMC2 or AMC2 extension board, power supply and battery	▶ Steel enclosure with status LED and preassembled cables ▶ 2 DIN rail system for easy mounting of AMC2 or MAC2 extension board, power supply and battery	▶ Steel enclosure with preassembled cabling ▶ This enclosure can be used for securely mounting and housing AEC and AMC2 and a power supply

Mounting Plate, Power supply

Material description	Mounting plate for 2 or 4 DIN rails	Power Supply Unit
Commercial type number (CTN)	AEC-PANEL19-UPS/AEC-PANEL19-4DR	APS-PSU-60
Information	▶ 4 rack units/ 88 horizontal pitches ▶ Up to four rails for AMC devices ▶ Battery bracket ▶ Screw socket for PBC-60 ▶ Cable kits to connect the power supply	▶ Power supply unit with integrated battery charging device ▶ Support of 12 V/7 Ah, 12 V/14 Ah and 24 V/7 Ah batteries

Access Hardware Extensions
Request-to-Exit

Material description	**DS160 Series High Performance**
Commercial type number (CTN)	DS160(white)/DS161(black)

Type	Request-to-exit Detectors
Information	▶ Door monitor with sounder alert ▶ Up to 64 second adjustable latch time ▶ Selectable relay trigger mode ▶ Selectable fail safe/fail secure modes

* Check regional availability with your local sales contact

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